5-1949

An Evaluation of the High School Physical Education Program of Freshman Girls at the Utah State Agricultural College in 1948, in Light of Basic Standards of Physical Education

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AN EVALUATION OF THE HIGH SCHOOL PHYSICAL EDUCATION PROGRAM OF FRESHMAN GIRLS AT THE UTAH STATE AGRICULTURAL COLLEGE IN 1948, IN LIGHT OF SELECTED BASIC STANDARDS OF PHYSICAL EDUCATION

by

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A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Physical Education

1949

UTAH STATE AGRICULTURAL COLLEGE
Logan, Utah

ACKNOWLEDGMENTS

The author wishes to express appreciation and thanks to the members of her advisory committee for their assistance and cooperation in the development of this work.

To Professor H. B. Hunsaker, who materially aided in the selection of the problem and who offered constant advice and encouragement, the author is especially grateful.

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INTRODUCTION

During the past fifty years physical education has emphasized such objectives as strength, health, recreation and education. Emphasis in physical education has been influenced by educational, economic and political conditions.

As a result of these influences, the physical education programs have gone through various stages of development and change. During certain periods we have had calisthenics, dance, sports, games, and various combinations of these activities. During the past few years, leaders in the field have endeavored to effect a program of study in physical education to be used as a guide for teachers in that profession.

Three years ago, the state department of education appointed a representative committee to write a state course of study in physical education for the secondary schools of Utah. Standards in policy, administration and programs were established. Courses of study were sent to superintendents, principals, and teachers of physical education, and many conferences were held with members of all three groups in attendance. Regardless of these efforts, it is believed by the writer that the high school physical education program of freshman girls at the Utah State Agricultural College is below the acceptable minimum standards.

To evaluate this hypothesis, it was decided to take a group of entering freshman girls at the U. S. A. C. in 1948 and evaluate their high school physical education program against selected basic criteria such as physical examinations, credit earned in physical education, years in physical education, days per week in physical education, intramural sports,

non-school sports participation, and the activities taken in physical education.

Purpose of the Study. Various sets of guiding principles have influenced the education programs in American schools: the Seven Cardinal Principles in 1918, the Educational Policy Commission objectives in 1938, and the National Education Association objectives in 1940. In 1946, the Aim, Purposes and Procedures formulated by the Utah Citizens Committee, had their effect on the educational programs of Utah.

Paralleling these educational objectives have been various governing principles and objectives for physical education. Such objectives as those stated by the White House Conference in 1930; the LaPorte Study Committee objectives in 1927; the Utah State Course of Study objectives in 1946; and the Jackson Mills report of 1948 have all had a marked influence on the programs of physical education taught in Utah high schools.

Objectives and principles have been influenced by various educational economic and political conditions, thus the program and objectives have varied and shifted from time to time.

During the period 1900-1915, the emphasis in physical education was placed on strength, and programs of physical education were built around activities which would build strength. The formal calisthenics and gymnastic program comprised the total high school physical education program. The period of 1918-1925, following the World War I and the White House Conference report on health, saw a wave of enthusiasm towards play and health. This changed the physical education program from formal gymnastics to games for health. Further objectives placed the emphasis upon games for the value they would contribute to the whole individual, with

emphasis upon such values as social, organic, skill, safety, psychological, knowledge, recreation and leadership.

As the emphasis was placed on the total development of the individual, it became evident that it would be impossible to secure all of the developments unless the activity program became very broad and included all students enrolled in the program. The LaPorte study and the Utah State Course of Study laid much stress on a broad and varied program of activities. This program was directed with various areas of activities. The idea was advanced that all students in physical education should have instruction in several activities in each area.

With the development of a philosophy in physical education, there were also developed standards for the physical education program. These standards included (1) physical examination, (2) an intramural program for all students, (3) daily programs in physical education, (4) credit in physical education on the same basis as other classes in the curriculum, and (5) physical education, a requirement for each year the student is in high school.

Statement of the Problem. The purpose of the present study is to evaluate the high school physical education program of 308 entering freshman girls at the Utah State Agricultural College in 1948, in light of selected basic standards of physical education.

The basic criteria for physical education used in this study were selected because of importance placed on them by authorities and state courses of study in physical education. The criteria included such items as (1) physical examination, (2) number of years in physical education, (3) credits in physical education, (4) days per week in physical education,

(5) intramurals, (6) sports participated in, in the various areas of physical education.

Because of the wide variation of interests and the seeming lack of ability of freshman girls as they enter physical education classes at the Utah State Agricultural College, it is the belief of the writer that their high school program has not been up to the minimum standards for physical education as set up by authorities and state courses of study in physical education.

Scope of the Problem. The study includes 308 entering freshman girls at the Utah State Agricultural College in the 1948-1949 school year. The standards selected to be used were those unanimously mentioned by authorities and state courses of study. Many items were mentioned as standards by certain authorities and in courses of study; but since they were omitted by some, and because in other cases they seemed controversial, it was decided not to use them as basic criteria in this study.

In considering the physical education program, it was decided to use the areas most universally mentioned by the authorities. There was not a common agreement in the various division titles and the sports placed in each division; therefore, compromise was necessary to set up this part of the study.

METHOD OF PROCEDURE

State courses of study and the writings by prominent authorities on the physical education program were used to determine the basic standards in physical education. Only those standards most universally mentioned were used in the study. Comments, suggestions and recommendations on physical examinations, physical practices and sports follow.

The physical (health) examination should be closely integrated with physical education programs, and for that reason it was selected as one of the basic criteria to be used in measuring the high school physical education programs. To enroll and exercise students in an activity class in physical education without an examination would be a very hazardous educational procedure. The Iowa State Course of Study for Girls (10, p. 277) says:

> The proposed program of physical education for high school students requires that a careful evaluation of the physical fitness of the pupils taking part be made as a safeguard for them and the school authorities. The importance of such a procedure is due to the strenuous nature of the activities and the age of the group involved.

Examinations should be required of all students at the entrance into high schools and then, periodically as the student progresses through school. LaPorte (5, p. 47) reports:

> A health examination should be provided and required of every student at least once in each school level, viz., upon entrance to the Primary, the Elementary, the Junior High, and the Senior High segments. If at all possible, it should be given annually. No student should be permitted to participate in strenuous activities, either in class or on athletic squads under the supervision of the school without such prior health examinations. Both the hazards to the child and the legal liability to the school justify such examination even though the cost may be considerable.

Voltmer and Esslinger state in The Organization and Administration of Physical Education (11, p. 162):

> A periodic health examination is the very foundation of the entire health program, as health protection, health instruction, and health promotion are all dependent upon it. By determining the health status of every student, the health examination may be used as the basis on which to plan a student's curricular and extra-curricular activities or as a yardstick to measure improvement in health and to guard against impairment of health. Cases of communicable disease must be discovered in order that their transmission may be checked and treatment be prescribed.

In the Utah State Course of Study (8, p. 2) it is stated:

> That every child be examined periodically and when necessary in order to know his health status.

In considering the physical examination as a basic criterion for this study, it was considered important to determine who gave the physical examination. Many types of examinations such as those for posture, physical fitness, etc., can be given by the physical education backer, but the physical (health) examination should be given by a medical officer. Voltmer and Esslinger (11, p. 163) say:

> Qualified physicians, dentists, psychiatrists, and nurses should give the examination, although the faculty or reliable students may assist with some of the routine details, such as weighing and measuring.

Physical education teachers should not give the physical examinations. LaPorte (5, p. 49) reports:

> School officers or teachers never assume the responsibilities of medical officers. Physical education teachers occasionally accept responsibility for diagnosis or for advising students on vital health matters. This is indefensible and should not be permitted. It antagonizes the medical profession and endangers the welfare of the child.

From the Iowa State Course of Study (10, p. 15) is stated:

> Every student should be given a medical and physical examination at the start of the school year. This is a protective measure and is sufficiently important to warrant careful consideration. If a school physician or nurse is not available, it may be possible to recruit the services of the local physicians for this undertaking.

The uses that can and should be made of physical examinations are many in the high school programs. It is doubtful that any programs in the high school will have greater use for physical examinations than will the physical education program. Physical examinations should be required before students participate in a sport and should be used to determine the amount of activity to be given to the student. Again referring to the Iowa State Course of Study (10, p. 277), we find:

> A complete medical examination is not only essential to determine which students are capable of vigorous exercise, but also affords an opportunity to detect existing defects that may be remedied.

Students participating in the intramural program should be required to have a physical examination before being allowed to participate. Inasmuch as it is a general practice to have the intramural program grow out of the physical education program, and since the intramural participation is generally more strenuous than the regular physical education, it would seem that in no case should an intramural program be organized that did not require a physical examination of all students. Referring to LaPorte (5, p. 59), he says:

> Students should be required to pass a physical examination by a licensed physician before they are permitted to participate in any athletic competition.

Physical education should be required each year that the student is in high school. Many states require that physical education be taught each year. The minimum standard suggested in the Utah State Course of Study (8, p. 4) is as follows:

> All pupils in the school should be enrolled in physical education classes. Pupils who are physically handicapped should not be excused from physical education but should be given modified activity adapted to their needs. During periods of illness or convalescence, pupils should be assigned to rest or to modified activity.

Credits in Physical Education. In using credits as a basic criterion for this study, it was recognized that the amount of credit given for physical education participation was not uniform in most schools, though authorities in physical education and state courses of study are uniform in their recommendations. The following is taken from Utah State Course of Study (8, p. 4):

> Credit should be allowed for physical education on the same basis as that given for other subjects in the curriculum. Health and physical education should be considered as important as other subjects in the assignment of credit.

In LaPorte's book, The Physical Education Curriculum (5, p. 50) he says:

> Increasingly it is being recognized that physical education credit should be required for graduation from a given school level on the same basis as other academic subjects; hence, definite arrangements should be made for proper grading in all activity courses, based on appropriate tests and followed by the recording of proper credit on a student's card.

The Iowa State Course of Study (10, p. 16) states:

> Physical education should be recognized as a school subject, with marks given, and credit awarded toward graduation for successful completion of the program.

Classes Per Week. The number of days per week that high school physical education classes meet for activity varies with each school. The most common practices are two days, three days, and five days per week. Most authorities recommend a daily program in physical education. The Utah State Course of Study recommends that physical education be taught daily. This is generally the recommendation used in other state courses of study, such as the Iowa State Course of Study (10, p. 17):

> The core sports activity schedule presented in this chapter should be used as a foundation program. It should serve as a general guide to program planning, but changes or additions should be made to encompass activities which have local interest. The so-called major sports (football, basketball, baseball, and track and field athletics) should be offered in season. The remaining activities may be presented during any period of the school year, although it is customary to conduct gymnasium activities such as wrestling, boxing, apparatus exercises, and tumbling during the winter season. If the program is offered five days a week, the core sports may be offered only three times a week and other programs be used the other days.

Voltmer and Esslinger (11, p. 99) say:

> The amount of time which should be devoted to physical education in the various grades depends upon the needs of children for big-muscle activity. Under the present circumstances the meager time allotted to physical education is best utilized by devoting it predominantly to instructional purposes with the hope that there will be sufficient carry-over in the leisure time activities of children to satisfy their needs for big-muscle activity. Physical education leaders believe that approximately an hour a day would be a desirable allotment of time, but few schools ever realize this ideal.

In Kozman's, Methods in Physical Education (4, p.206) it is reported:

> A daily period in physical education has long been the standard for time allotted each boy and girl for participation, a standard not yet reached in secondary schools which provide two or three periods per week, only extra-class time, or no time at all for physical education. Once the standard of five periods per week is attained, there is little doubt that we shall move on to the better and different ideals of allotting time on the basis of individual student's needs. Some experimentation has been carried on with this basis of time allotment, but not enough so far to substantiate any procedures as "best" practice. This discussion is therefore cast in terms of the present standard.

Intramural Sports. Intramural sports have very generally become an accepted part of the physical education program. It is doubtful that a satisfactory physical education program can be achieved unless it comprises intramural sports. This area of physical education acts as a laboratory for our regular physical education program. The Utah Course of Study recommends the following: (8, p. 6)

> An intramural athletic program should be organized to supplement the instructional periods in physical education. Such a program should be varied enough to supply opportunity for pupils of different interests and abilities to participate and should be organized on a seasonal basis. Lists of activities suitablefor intramurals are found in a subsequent section.

In the Iowa State Course of Study (11, p. 16), we find:

> Intramurals, together with the required, the corrective, and the interscholastic programs, make up four areas in physical education. All are concerned with the development of the student through physical activity.

> The intramural program attempts this development through a games program during out-of-school hours, with students choosing their own activities. The integration of this program with that of the required program is limited by an insufficient time allotment and by an overload of facilities. If the program recognizes this limitation and confines itself to the necessary fitness drills, the introduction to activities and the teaching of basic skills, the intramural program may proceed from this point. Every student may then choose his preferred activities and continue on his own time to improve his physical fitness, as well as to acquire some of the social, mental, and moral development inherent in such activity. Supervision of the program, however, is essential to assure its direction toward desired educational outcomes.

L. W. Miller (7, p. 51) states:

> If it is desirable for varsity athletes to undergo a thorough physical examination, it is equally desirable for intramural competitors to do likewise. Health may be seriously impaired in intramural competition, and the most essential safeguard is the required physical examination for all competitors.

In reference to this particular study, LaPorte (5, p. 88) says:

> With such a vigorous program it is exceedingly important that every student have a thorough health examination at least once in each school level, and preferably every year. Those unfitted for an unlimited, vigorous program should be assigned to restricted activities where they will be given as much of the elements of the programs as they are capable of handling.

In setting up the rating chart, it was decided to determine the extent of student participation in all activities and the participation in each of the various areas suggested by authorities and state courses of study in physical education.

A physical education program should be varied, broad and in addition to helping the student meet problems of today, it should help prepare them for a useful happy life tomorrow, as pointed out by Voltmer-Esslinger (11, p. 65):

> The offering in physical education should include activities that are useful during the time that a student is in school as well as after their school days are over.

The program of physical education should include activities in the various divisions of physical education.

Mabel Lee (6, p. 86) states:

> The White House Conference briefly outlined the correct educational program as consisting of (1) play, (2) games, (3) rhythmical activities, (4) self-testing activities, and (5) out of school activities.

The Utah State Course of Study (8, p.11) lists the following divisions of physical education:

> (1) athletic activities, (2) competitive, (3) dance, (4) formalized, (5) outing and related, (6) water activities, (7) winter, and (8) self testing activities, and suggests that the students have two activities in each group to have a minimum program, with one additional in each group to reach an average program, and to reach the full classificational other additional activities are recommended.

In regards to the girls physical education program, The National Section on Women's Athletics (1, p. 1) recommends the following:

> Offer more than one sport in each season whenever possible and include individual dual team sports and games.

The LaPorte study committee (5, p. 31) suggests:

> A core program consisting of basketball, gymnastics, field hockey, rhythms, soccer or speedball, softball, swimming, diving, life saving, tumbling, pyramids, and volleyball. They also suggest an elective program consisting of several individual sports, outing activities and dance activities, and further state that one-third of the total program came from the latter group.

Northwestern University uses a survey blank for all entering freshmen on which all of the sports are divided into (1) team sports, (2) individual or dual sports, and (3) rhythmic activities.

The Iowa State Course of Study in Physical Education (10, p. 17) suggests the following:

> The physical education instructor should endeavor to include in the program a wide variety of the activities.

> The expressed desires of the students should be considered, but not to the point of outweighing their needs. A proper balance between team sports, individual, and dual sports, and conditioning activities should be maintained to provide numerous educational experiences. It may not be possible to offer all the activities mentioned in any one school because of limited facilities and inadequate time allotment, but every attempt should be made to introduce additional activities into the program from time to time as opportunities arise.
>
> The core sports activity should be used as a foundation program. It should serve as a general guide to program planning, but changes or additions should be made to encompass activities which have local interest. If the program is offered five days a week, the core sports may be offered only three times a week, and other programs be used the other days.

In light of the above suggestions, the writer selected the following areas to be used in classifying the sports in physical education: (1) aquatics, (2) dance, (3) rhythmics, (4) individual, (5) team, and (6) mental games. All of the activities listed by other authorities and courses of study fell into the above classification; also most of the same group titles were used.

In checking over the number of suggested activities in each group, it was very common to find three to four activities suggested by the other studies; thus, the writer believes that any standard program would include three sports in each group, as the minimum essential for a well-rounded physical education program.

Realizing that the amount of time spent on the activity, and that various other factors were important in any analysis of the activity program, the writer set up the following scoring system for the sports:

Had class in high school ---------- 5 points
Played on non-school basis -------- 3 points
Know and can play the sport ------- 1 point
Cannot play the sport ------------- 0 points

Considering the above suggestions and standards and using the above scoring plan, a student participating in a standard four-year high school physical education program would score fifteen participation points in each of the six sports divisions and would have a total participation score of ninety points.

This check sheet was completed by the freshman girls at a station at the time of the physical examinations, which was before participation in any physical activity at the Utah State Agricultural College.

A standard set of directions was given to each student, and three trained people assisted in giving interpretations and directions at the station. Adequate time was given for the student to consider and answer the questions. Before the check sheet was turned in, it was checked by the assistant.

After all check sheets had been completed, they were checked for accuracy in score and totals.

A master sheet was constructed involving the basic standards and providing total scores in each group. The information on the individual check sheets was then tabulated for the purposes of clear analysis. It was decided to divide the total group into three study groups; namely, Utah students, Idaho students, and other students.

Review of Literature. In the search for related studies, one was found that is closely related to the subject of this thesis and covers many of the same high schools. This study conducted by Miss Helen Strain of the Utah State Agricultural College in 1944 is entitled An Evaluation of Certain Aspects of the Preservice Training Program for Teachers of Girls' Physical Education. The purpose of her study was

to evaluate the pre-training physical education program of girls, or in other words, to evaluate their high school physical education program. The first step in her study was the setting up of certain criteria upon which to base a well-rounded physical education program.

These criteria were obtained from nine years of study conducted by LaPorte. Some changes were thought desirable by the writer to meet local conditions.

The division of the program and the sports included in each area are as follows: (9, p. 83)

Criteria	College Curriculum	Hours Credit
Group Team Sports	Group Team Sports	
Soccer and	x	1
Volleyball	x	
Softball and	x	1
Speedball	x	
Team Sports	Team Sports	
Handball	Recreational	
Horseshoes	Games	
Paddle Tennis	x	1
Table Tennis	x	
Individual Activities	Individual Activities	
Skating	x	1
Skiing	x	

The second step was the preparation of a check list which was sent to high schools of Utah. Each school was asked to check the sports and activities taught in their physical education departments.

The data returned were evaluated against the LaPorte study with the following findings: (9, p. 83)

(1) The physical education program throughout the state of Utah does not meet fully the standards set up by the LaPorte committee on

Curriculum research largely because of the following:

a. Lack of interest on the part of teachers and administrators, facilities, and teacher preparation, prevent the inclusion of the field type of activities in the group team sports area. There are facilities for team sports in but 50% of the schools.

Recommendations: That rhythmical activities receive more emphasis, and that more emphasis be put on team sports in the college program because of lack of emphasis in high school programs.

The lack of facilities for water and winter sports in 45 percent of the schools would seem to indicate that the public in general must be educated concerning the value of those sports.

A study by Miss Bernice Ensign, Stewart Training School, University of Utah, 1942, entitled A Study of the Present Status of Teacher Training in Dance in the State of Utah, evaluated the secondary school dance program against dance authorities' recommendations in dance.

In conclusion, Miss Ensign states: (2, p. 15)

> The teacher-training institutions of Utah are attempting to teach the skills of all currently popular sports as well as the various forms of dance to students majoring in physical education. They are attempting to prepare these same students to become teachers of physical education on the junior and senior high school levels. To accomplish both of these objectives is time consuming and expensive when considered from an administrative viewpoint. Several authorities answering questionnaires suggested that a five year course or major in dance alone might be the solution to the problem. If students in elementary and secondary schools were better trained in dance and sports techniques, those students coming to college would be better prepared to handle the work leading to the teaching of physical education. Students majoring in mathematics, for instance, do not expect to take elementary arithmetic in college, but come ready to do work of college caliber. Similarly, when the standards of entrance requirements into the physical education department are such that the preliminary

training of skills and techniques has been done, there will be sufficient time in the college course to adequately prepare students to become teachers of physical education.

Another study conducted by Miss Madelyn Walker, Washington State College, 1943, entitled A Survey of Girls' Health and Physical Education Programs in Junior High Schools in the State of Washington, offers an interesting comparison with the present thesis in the establishing of basic criteria for judging a standard program.

Among other items, Miss Walker used days per week in physical education, equipment, and the amount of time spent in various activities.

Some of her conclusions that have a bearing on this thesis are: (12,p.7)

1. Only twenty schools in Washington have five periods per week in physical education. It seems that provisions should be made to increase the time allotment.
2. Rhythmical activities seem to be slighted somewhat.

Another study by Israel C. Heaton, Utah State Agricultural College, 1941, entitled An Evaluation of the Health and Physical Education Programs in High Schools of Utah, is of value to this thesis, as it covered some of the same schools as the present thesis.

The purpose of his study was to call to the attention of the schools the characteristics of a good physical education program.

A score card consisting of ten questions was mailed to all high schools of Utah. Five of the ten questions were related to problems of this thesis; they were (1) curriculum construction, (2) systematic instruction, (3) daily participation, (4) intramural participation, and (5) detailed yearly program.

Findings in Heaton's study related to this thesis are as follows: (3, p. 18)

(1) The health and physical education program of the high schools of Utah score 49.83% of the standards set up by the Committee on Curriculum Research for a superior-ideal program.
(2) Availability of facilities for water activities scored below the fair-minimum program.
(3) Modified individual corrective activities barely got over the minimum program.
(4) Four schoos do not have facilities for minimum outdoor programs.
(5) Eighty-three percent of the schools have adequate indoor programs.

ANALYSIS OF DATA

Table 1. Distribution by area of the 308 freshman girls used in the study

Group	No. of Students	High Schools
Idaho	47	27
Utah	223	46
Other States	38	16
Total	308	89

The 308 students in his study represented a total of 89 high schools, largely in northern Utah and southern Idaho, sixteen other states, England, and Hawaii.

Fifteen schools have five or more students in the study. Thirteen of these schools are in Utah, one in Idaho, and one in Wyoming.

Table 2. Schools with five or more students

School	No. Students	School	No. Students
Logan	49	Jordan	6
Bear River	19	Tooele	6
North Cache	19	Bingham	5
South Cache	14	Payson	5
Box Elder	11	Spanish Fork	5
Davis	9	Preston, Idaho	5
South Sevier	8	Star Valley, Wyo.	6
Weber	8		

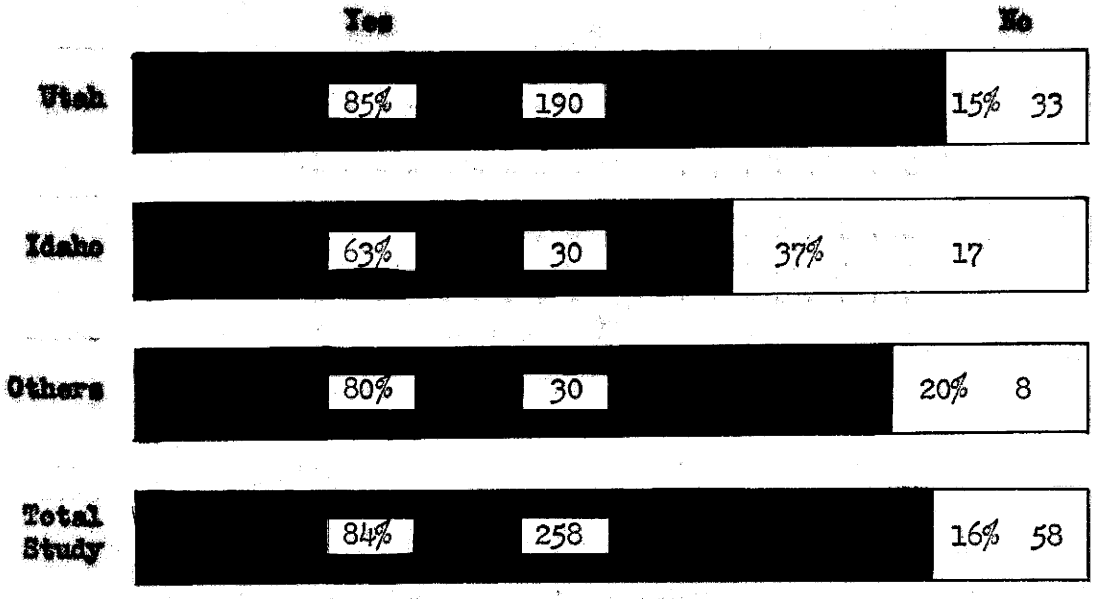

Figure 1. Study of the 308 students and their physical examinations while in high school

In the above figure a study of the physical examinations reveals that many students are taking physical education without having had physical examinations.

Schools that sent large groups of students to the college were the schools that had given examinations. For instance, Logan sent 49 students and all had examinations; North Cache 19, all with examinations; South Cache 14, all with examinations; Box Elder 11 with 10 examinations. Many schools with one, two, and three students in the study had no students with examinations.

Some schools gave more than one examination during the four years. In Utah 304 examinations were given to the 190 students having had examinations. In Idaho 30 students were given 47 examinations, and among other students, 30 had 47 examinations.

Authorities and state courses of study are agreed that the minimum requirement acceptable is a yearly physical examination. In considering the 308 students in the study, 16 percent had no physical examinations while in high school.

When the minimum standard of a yearly physical examination is considered, it is doubtful that any school is meeting this standard, as no group averaged more than two physical examinations while in high school.

No attempt was made to determine the nature and extent of the physical examinations given, except to determine whether they were given by a qualified person.

Table 3. A distribution of the requirements of physical examinations for physical education

	Cases	%
Yes	168	55
No	140	45

Table 3 is an analysis of the requirements of physical education for participation in the physical examination program.

Forty five percent of the students represented in this study took part in the physical education program without a physical examination.

According to the authorities in physical education and state courses of study, all students engaging in physical education activities should have a physical examination.

This study did not determine whether a yearly examination was required, nor did it determine whether students were placed in activities according to their rating given by the medical examination.

Table 4. A distribution of the requirements of physical examinations for intramural sports

	Cases	%
Yes	94	30
No	214	70

Table 4 is an analysis of the requirements of physical examinations for intramural sports or girl's athletics.

Seventy percent of the girls in Utah participated in intramural sports without a physical examination. Recognizing that competitive sports is generally the most strenuous type of physical activity used in the physical education program, this is a very serious practice in certain high schools represented in this study.

Authorities and state courses of study were agreed that physical examinations should be required of all students participating in an intramural sports program.

Table 5. A distribution of the physical examinations given by medical doctors

	Cases	Percent
Yes	238	77
No	70	23

Table 5 shows that 70 students, or 23 percent, received examinations other than by a medical doctor. No attempt in this study was made to determine who gave the examinations other than the doctor.

Authorities and courses of study in physical education were agreed that all school physical examinations should be given by the medical doctor.

According to Voltmer and Esslinger (11, p. 163):

> Qualified physicians, dentists, psychiatrists, and nurses should give the examination, although the faculty or reliable students may assist with some of the routine details, such as weighing and measuring. Women physicians should examine the girl students.

The practice of exercising students in physical activities who have had a physical examination other than those given by an M. D. might be more dangerous than exercising without any examination. Teachers and students may be operating under a sense of false security unless the examination is given by one qualified to give the examination.

A check of physical examination blanks used by schools represented in the study showed that the examinations given by the medical doctor vary in the extent and the condition under which they are given.

Further study is suggested in the type, extent, and use made of the physical examinations.

Table 6. A distribution of the 308 students as to the number of years they took physical education

Years in Physical Education	Students			Per-Cent
	Utah	Others	Total	
0	5	17	22	.071
1	23	26	49	.159
2	88	22	110	.357
3	72	3	75	.243
4	35	17	52	.170
Total	217	68	308	100%

Table 6 is an analysis of the number of years that the girls took physical education. Twenty two students had no high school physical education. Fifty two girls took physical education all four years, while the highest number, 110, took physical education for two years.

In the schools covered by the study, there is no standard practice among the schools as to the number of years physical education is taken by the girls while in high school.

The standard practice, as suggested by the authorities in physical education and the courses of study, is that physical education should be taught each year that the student is in high school.

Eighty three percent of the students in this study are below the suggested standard of a year in physical education for each year of high school work.

Table 7. Distribution of the 308 students as to the number of credits earned in physical education

Credits in Physical Education	Students			Per-cent
	Utah	Others	Total	
0	18	27	45	.146
1/4	3	1	4	.013
1/2	34	6	40	.129
3/4	15	0	15	.048
1	49	29	78	.253
1 1/4	5	1	6	.019
1 1/2	29	1	30	.097
1 3/4	1	0	1	.003
2	26	11	37	.120
2 1/2	2	0	2	.006
3	31	2	33	.107
3 1/2	0	0	0	.000
4	9	7	16	.051
Total	223	85	308	.999

Table 7 is an analysis of the number of credits earned in physical education while in high school. The practice of giving credit in the schools covered by this study range from one-fourth unit per year to one full credit. The most common practice is to give one-half credit for a full year of study.

Very few students, or about five percent, have four years of credit earned in physical education at the time of graduation.

A majority of the schools covered by this study are below the standards suggested by authorities and courses of study in physical education. The suggested standard is that physical education should be given on the same basis as other studies, one credit for each full year of study.

Table 8. Number of days per week that physical education was taken for credit

Days per Week	Students			Percent
	Utah	Others	Total	
2	19	12	31	.108
3	81	24	105	.368
5	117	32	149	.524
Total	217	68	285	100%

Table 8 is an analysis of the number of days per week that physical education was taught.

A majority of the girls, 52 percent, took physical education five days per week. It is believed by the writer that this number is not accurate, for many schools covered by this study alternate health education with physical education, and the title of the course is still called physical education.

Forty seven percent of the students meet less than five days per week.

The standard practice suggested by the authorities and courses of study in physical education is five days per week of physical education, and it should not be alternated with health or hygiene instruction.

Further study is suggested to determine the practice of alternating health instruction and physical education. In many schools the alternation is on a daily basis; others alternate on a quarter or semester basis; the latter seems to be the more acceptable practice.

In checking with schools represented in the study, it is found that daily alternation is resorted to because of limited gymnasium facilities.

Table 9. Number of students having an intramural program while in high school

Intramural Program	Students	Percent
Yes	220	.714
No	88	.286
Total	308	100%

Table 9 is an analysis of the intramural sport or girls athletic program.

Twenty eight percent of the girls represented in this study had no intramural program.

Authorities and courses of study in physical education recommend that the physical education programs include a broad intramural program to supplement the regular teaching program.

No effort was made in this study to measure the type and effectiveness of the program. Further study is suggested to determine the extent and type and effectiveness of various types of intramural programs.

Table 10. Analysis of Aquatics

Group	Average Participation Score	Average Interest Score	No. of Students
Idaho	1.5	6.9	47
Utah	3.4	8.0	223
Other Students	3.7	8.5	38
Total All Students	3.2	7.6	308

The student's participation and interest in aquatics was scored by his participation and interest in the following swimming activities: diving, swimming, life-saving, and water polo.

Participation. The individual participation scores range from the highest, 36, to the lowest of zero, with 132 students out of the total of 308 making a zero score.

A check of the high schools in the study with five or more students reveals that Box Elder High School students average 6.7 points as against the all-study average of 3.2.

Forty six high schools in Utah had students in the study, and only five of the 46 schools have swimming pools and teach swimming as part of their physical education program.

Interest. Interest scores in aquatics were much higher than participation scores. The all-state average participation score was 3.2, while the average interest score was 7.6. All study groups gave a greater interest score than the participation score. Idaho, with 47 students, had a high average interest score of 6.9, as against average participation of 1.5. Utah was 8 against 3.4. Other students were 8.5 against 3.7.

Two hundred thirty one students, or 75 percent of the total group studied, expressed a greater interest in aquatics than their participation score.

Authorities and state courses of study recommend a minimum of three activities: swimming, diving, and life-saving. If instruction were given in these three activities, the student should score 15 points.

The average score for the group was 3.2 points, which is far below the minimum standards.

The availability of swimming pools in the high school program is an important factor, and unless high schools have pools available, one can expect a continued low standard in the area of the program.

Table 11. Analysis of Dance Rhythms

Group	Average Participation Score	Average Interest Score	No. of Students
Idaho	6.3	12.12	48
Utah	10.34	11.35	223
Other Students	8.15	10.34	38
Total All Students	9.42	11.34	308

The participation and interest scores in dance and rhythm activities include the following activities: tap, clog, modern, folk, social, tumbling, pyramids, and recreational games.

Scores on participation range from a high of 37 to a low of zero, with 43 individuals scoring zero. The average for the 308 students included in the study was 9.42.

Social dance had the highest participation score, with folk dance second, and tap dance third.

Interest scores in all groups studied were higher than the participation scores. It is interesting to note that the Idaho group had a participation score of only 6.3, but its interest score of 12.12 was less than one point from the average of 11.34 for the total group in the study.

Students from the Utah high schools had a higher group participation average than any other of the study groups.

Literature in the field and state courses of study in physical education of a few years ago indicate that dance was once a greater part of the girls' physical education program than it is today. Addition of the other areas of the programs has lessened the amount of time available for dance participation.

Authorities and state courses of study are agreed that the girl should be taught various types of dance. Setting minimum standards for this group at three activities, a total individual score of 15 points, would be expected. The average for the 308 students was 9.42.

Table 12. Analysis of Individual Sports

Group	Average Participation Score	Average Interest Score	No. of Students
Idaho	2.50	10.51	47
Utah	5.15	12.98	223
Other Students	4.50	11.13	38
Total All Students	5.17	12.35	308

Participation and interest scores in individual sports includes the following activities: archery, skiing, track-field, riflery, bowling, skating, snowshoeing, billiards, badminton, fencing, golf, tennis, horseshoes, and ping pong.

The highest individual score in this section was 21, and the lowest score was zero, 67 students of the 308.

Interest mean scores are double the participation mean scores, indicating

a much greater desire for physical education courses in this area than are being taught.

Authorities and state courses of study listed several sports in this group as desirable for a high school girl, and in many instances three and four activities were listed as core activities. In using three sports as a suggested minimum, the writer feels that it is the very minimum that would be acceptable in this area.

The average of 5.17 for the group is far below the suggested minimum standards of 15 points.

Table 13. Analysis of team sports

Group	Average Participation Score	Average interest Score	No. of Students
Idaho	9.65	5.55	47
Utah	14.08	7.29	223
Other Students	12.36	7.34	38
Total All Students	13.20	5.41	308

The participation and interest scores in team sports includes the following activities: basketball, softball, soccer, volleyball, speedball, ice hockey, and field hockey.

The highest individual participation score was 35, and the lowest was zero, with 25 students scoring zero. The average participation score for the whole group was 13.20.

Interest scores are only approximately fifty percent of the participation scores. It is interesting to note that the participation average scores for teams are higher than for any other group of activities, and

that the interest scores are lower than for any other group.

Basketball as a sport has the highest participation score, with 205 students scoring five points, and twelve students scoring three points. Softball came second in participation with volleyball third. Twenty-five students of the 308 had no participation score in team sports.

In interest, basketball was ranked the highest by the students, with softball second, and volleyball third.

Field hockey and ice hockey ranked lowest in participation, with only 18 and 16 students, respectively, having played the sport. These sports had interest and participation scores of 34 and 59, respectively.

Table 14. Analysis of outing activities

Group	Average Participation Score	Average interest Score	No. of Students
Idaho	6.78	9.27	47
Utah	7.83	12.02	223
Other Students	7.68	11.91	38
Total All Students	7.65	11.58	308

The study takes up such activities as: camping, hiking, canoeing, riding, and other out-of-door activities. This section does not include all out-of-door activities, as three sports, skating, skiing, and snowshoeing, are listed with the individual activities.

The highest individual participation score is 36, and the lowest is zero; many students had no score in this section. The mean score for the 308 students was 7.65.

Interest scores in outing activities were generally much higher than

participation scores. Utah students had the highest participation score and also the highest interest score.

Using the minimum suggested standard of 15 points as the desired score, and comparing it with the group average of 7.65 points, it was found that the group as a whole is low in participation in outing activities while in high school.

Table 15. Analysis of mental activities

Group	Average Participation Score	Average interest Score	No. of Students
Idaho	3.89	4.12	47
Utah	4.16	4.66	223
Other Students	3.63	4.13	38
Total All Students	4.58	4.49	308

Table 15 is an analysis of the mean scores of the 308 students' scores in mental games. Activities listed in the mental games section included: checkers, chess, milde, rook, bridge, pinochle, etc.

The highest individual participation score in mental games was 18 points, and the lowest was zero. The highest individual interest score was 28.

The two activities in the mental games having the highest number of students' participation were checkers and rook, and the two having the highest interest score were bridge and pinochle.

The participation mean was about the same as the interest mean for the 308 students. This probably could be accounted for by several reasons:

(1) Mental games as part of physical education are generally used for that group of students not physically able to take the regular physical education class.

(2) Mental games are considered more as a recreative activity rather than as physical education.

(3) Students generally prefer a more active type of exercise for physical education.

The average of 4.58 for the group is below the suggested average of 15 points. This area of the study might not adequately represent the physical education program, as it is specifically designed for the handicapped students.

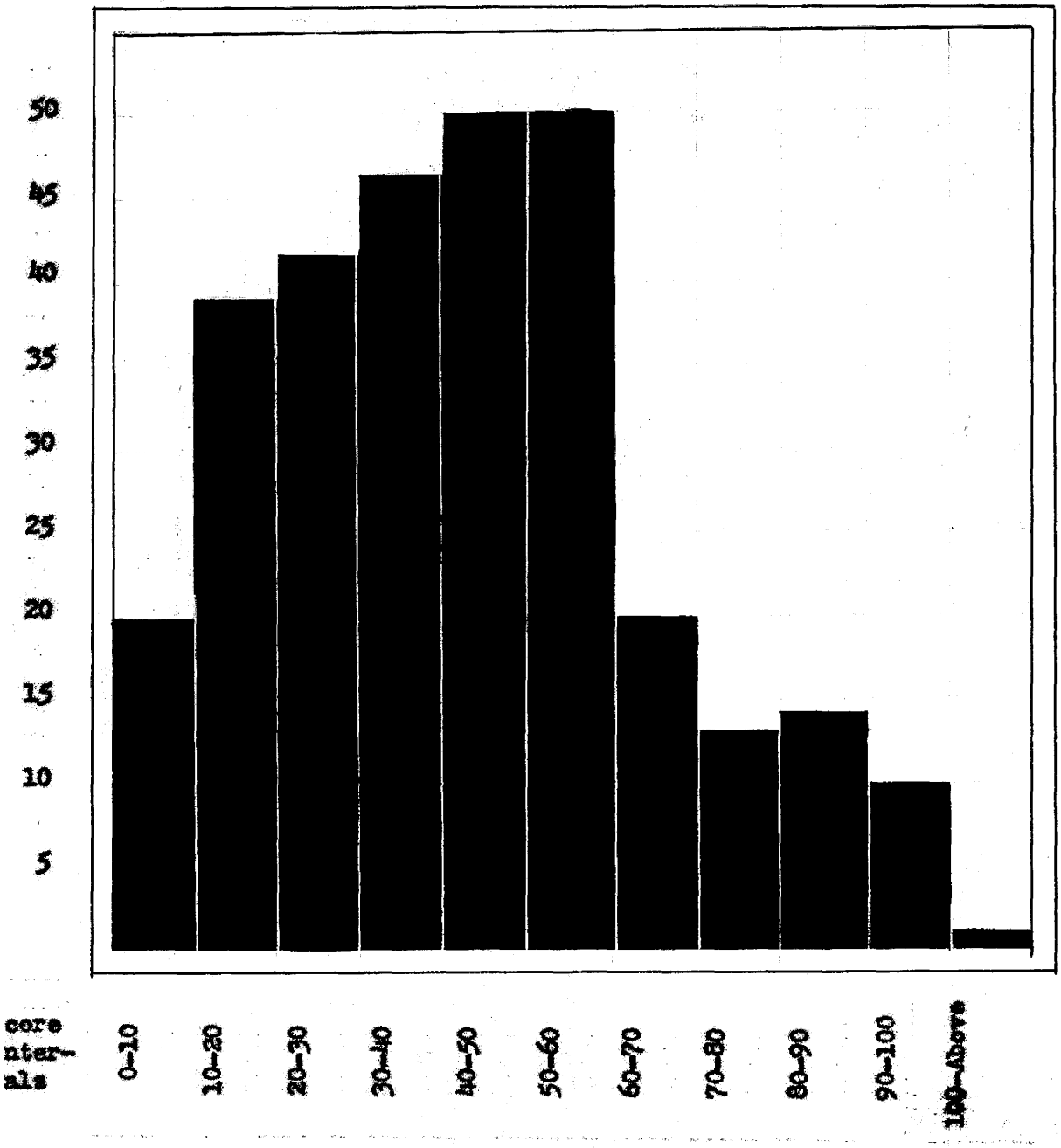

Figure II. Study of the mean participation score of the 308 students in all activities

The mean score for the 308 students in the group was 44.23 points. A student having received instructions in a total of nine sports would excel this score by 4.77 points.

A student taking physical education for two years (4 semesters) would average about two sports for each semester.

In the region covered by the study, the students would probably have one indoor sport and one out-of-door sport each semester. Some schools in the study must have included two indoor and two out-of-door sports each semester, or the students must have taken more years of physical education to score upward of 80 sports points.

In the group, the Utah students had a mean score of 43.86, Idaho a mean score 30.42, and other students a score of 39.21.

It would be difficult to draw any conclusions about either groups in the physical education program without considering the amount of credit, number of years physical education was taken, and the number of activities offered in the program. In many cases it is probable that such sports as basketball, volleyball, dance, and softball were taught each year. No effort was made in the study to determine the amount and kind of instruction given in each sport.

In comparing this section with the suggested minimum standards for the six areas which give a student 90 total points, the average total score for the 308 students was 44.2 points, or approximately fifty percent of the desired score. This does not mean that the physical education was fifty percent of what it should be, but that the instruction in a wide variety of activities was below normal. A physical education program might score

only 45 points, but the amount of activity might increase in a few sports. No attempt in this study was made to measure progression in the sport or the amount of activity in any one sport.

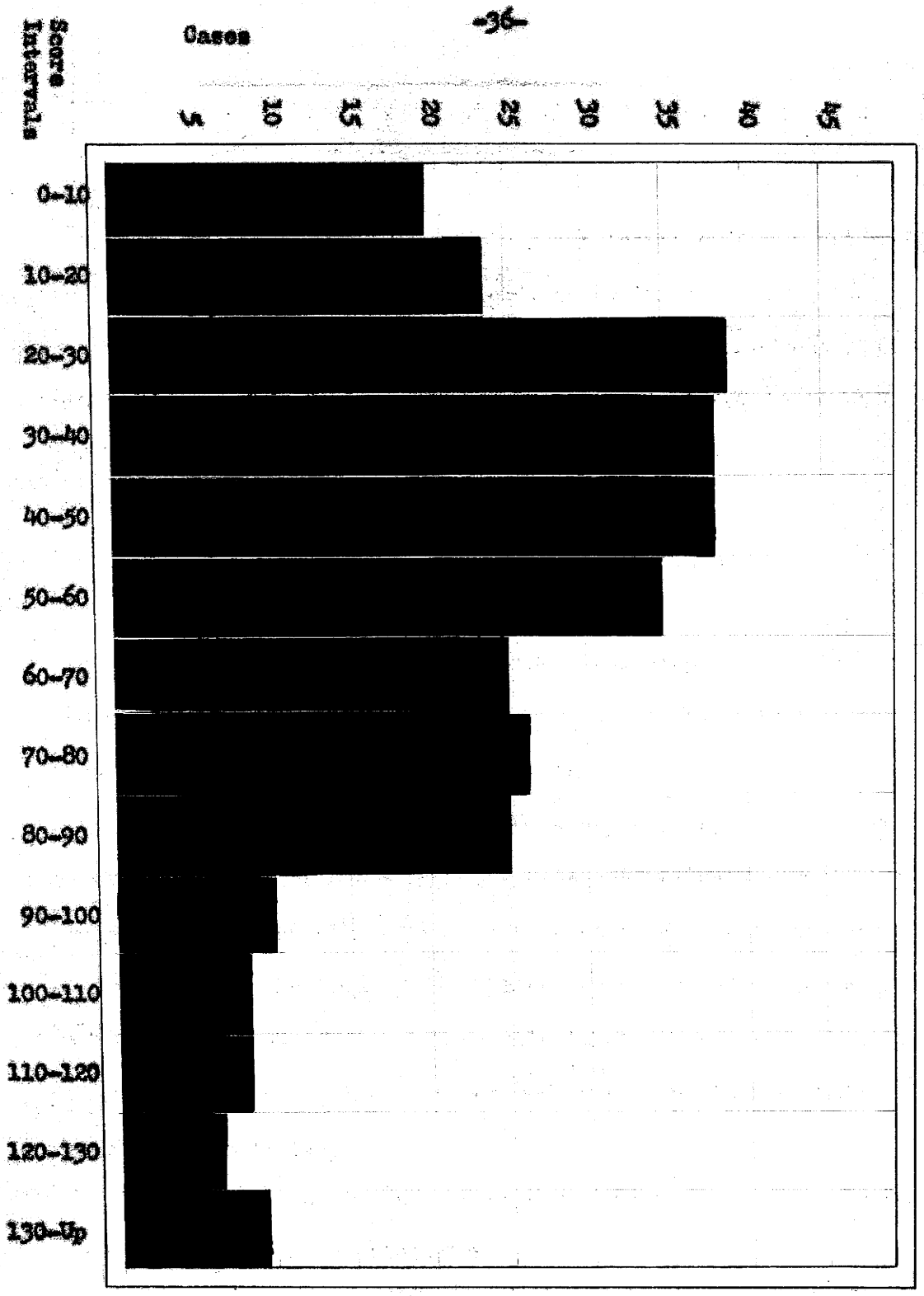

Figure III. Study of the mean interest score of the 308 students in all activities

The mean score for the 308 students' total interest in all sports section (division) was 54.61 points; this was 13.38 points higher than the average participation score.

The number of students in the intervals from zero to ten was about the same in interest and participation, but in all the intervals above ten, to and including the 50 - 60 interval, the participation score was much higher than the interest score. In the intervals above 60 the interest score was higher than the participation score.

Students who had scores of from 10 to 60 indicated an increased interest in additional activities. Thirty one scores in the interest table were higher than the highest score in the participation table.

The difference in interest and participation scores resulted largely from students expressing interest in groups of activities other than the team sports group where they generally scored high in participation and low in interest.

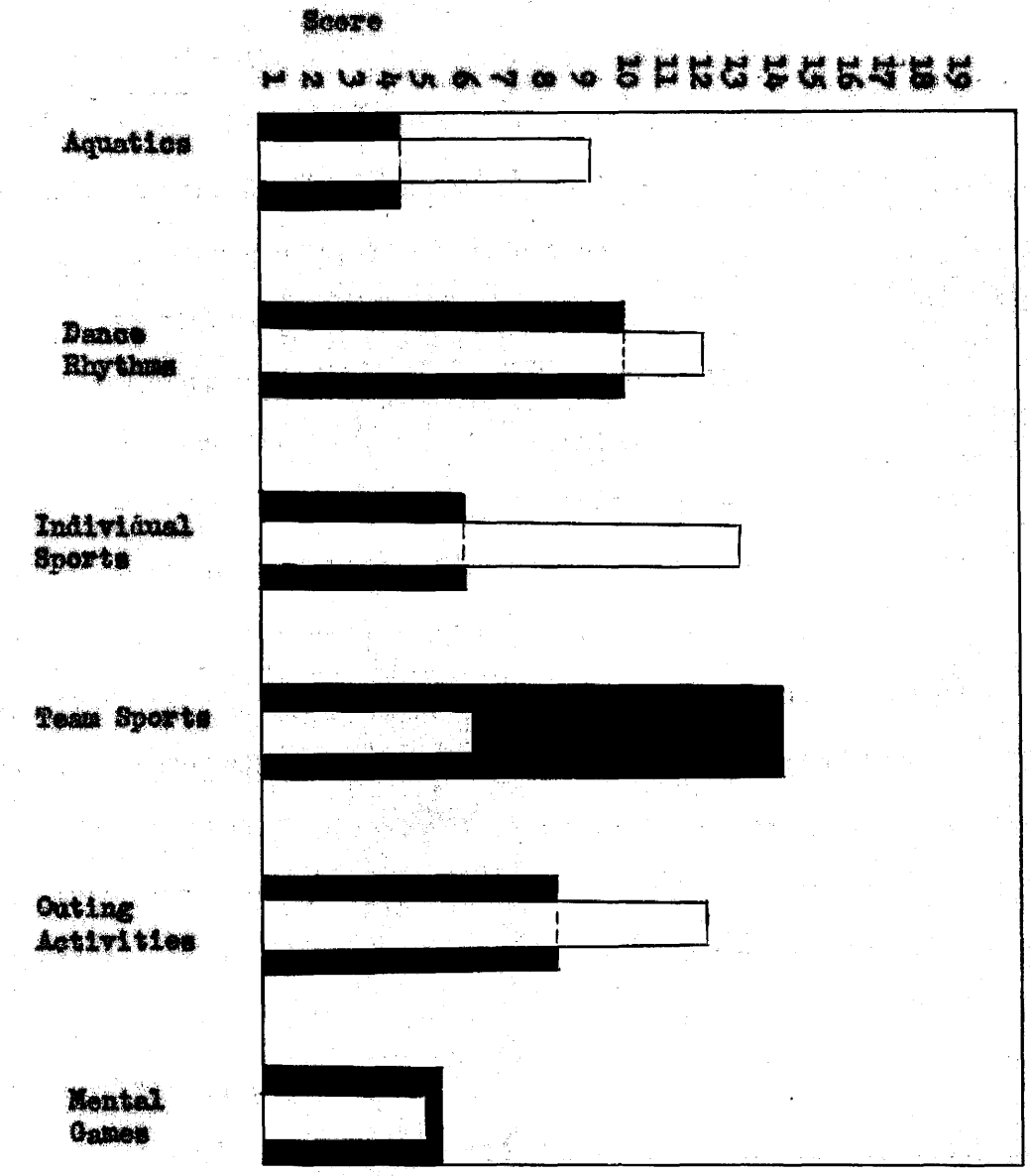

Figure IV. A composite study of mean participation and interest score in each of the activity groups

In Figure IV, the mean score in participation and interest of the 308 students is considered. Four of the six study sections have a higher interest mean score than participation score. One section, that of team sports, has a lower interest score, and one, mental games, is approximately the same.

Aquatics, dance, individual sports, and outing activities have a much higher interest score than do team sports and mental games.

Team sports have the highest participation score, with dance and outing activities being rated second and third, respectively.

Individual sports have the highest interest mean, with dance and outing activities again being second and third.

If interest were the only criterion for teaching a sport in the physical education program, then a decided change would be suggested in relation to the amount of time and teaching of the various physical education activities. State courses of study in physical education and writers in the field of physical education suggest other criteria:

Winter activities	10%	Athletic activities	26%
Self-testing	12%	Dance	20%
Outing activities	6%	Aquatics	10%

Since this study in considering only participation and interest, interest in the activity is not used as much as possible in motivation of the student. It would not seem wise to change the program until further study is made of facilities available and the contribution of various sports and areas to physical education objectives or student needs.

CONCLUSION AND RECOMMENDATIONS

On the basis of the study just completed, the following conclusions and recommendations are presented.

(1) Many students are matriculating in the high schools without having had physical examinations. Sixteen percent of the students in this study did not have a physical examination while in high school. The minimum standard of a yearly physical examination suggested is not being met.

It is recommended that high schools should require a yearly physical examination of all students enrolled.

(2) An analysis of material on physical examinations by a medical doctor reveals that 70 students or 23 percent received physical examinations other than by a medical doctor. No attempt was made to determine who besides the doctor gave the examinations. In setting up the standards for this practice, no other person was suggested as qualified to give this examination. Therefore, it is recommended that the practice of accepting students into physical education activities with examinations other than by a medical doctor be discontinued in high school. It is further recommended that a study should be made of the following:

a. who is giving the physical examination other than the medical doctor; and,

b. what is the type, extent, and use made of the physical examinations given to high school students.

(3) Forty five percent of the students in this study were not required to take a physical examination before participating in the

physical education program.

The suggested standard was that no student should participate in physical education activities without first having had a physical examination.

It is recommended that practices of enrolling students in physical examinations without a physical examination be discontinued.

(4) Seventy percent of students participating in an intramural program were not required to have a physical examination. The suggested standard was that no student should participate in intramural sports without a physical examination. Realizing that intramural sports involves competition which is a factor in over exertion and fatigue, and that they are generally the most strenuous part of the physical education program, it is recommended that no student be allowed to participate in the intramural program who has not had a physical examination; further, that the examination should determine the type and the amount of intramural activity that should be engaged in by the student.

(5) Analysis of the data on the number of years that physical education was taken while in high school showed that 48 percent of the students were below the suggested standard of enrollment in physical education each year while in high school.

In light of the findings and suggested standards, it is recommended that high schools require physical education each year that the student is enrolled in the school.

(6) Schools are not uniform in the amount of credit given for physical education participation. The practice ranges from one-fourth unit to a full unit for a year of participation. In view of this practice

and in the light of the suggested standard, it is recommended that physical education credit be given on the same basis as that used in other school activities.

(7) Fifty two percent of the students in the study took physical education five days per week, meeting the standard suggested by the authorities. Forty three percent met less than five days per week and were below the standards. It is recommended that physical education classes be conducted on a five-day-per-week basis.

(8) Fifty eight percent of the students did not participate in the intramural sports program. Authorities were agreed that the physical education program should include intramural sports as a part of the program. It is recommended that a broad program of intramural activities supplement the regular physical education program.

(9) In general, the students represented in this study have had physical education activities largely in the team sports division. It seems that the program has been concentrated around a few sports in the team-sport division.

Using 15 participation points as the minimum standard, all six of the study divisions showed a need for increased program offering, as the mean score in all divisions was below the suggested minimum standard.

Team sports had the highest participation mean score of 13.2.

Table 16. Other division scores in order

Rhythms - Gymnastics	9.42
Outing activities	7.6
Individual activities	5.17
Mental games	4.5
Aquatics	3.2

Table 17. Interest mean scores for the various divisions

Individual activities	12.3
Outing activities	11.5
Dance - Rhythms	11.3
Aquatics	7.6
Team games	5.4
Mental games	4.49

It is recommended that the program of physical education be more varied in the offering of activities, with activities from each division being taught each year. This would be in line with the present recommendation by the Utah State Course of Study in Physical Education.

It is also recommended that where possible serious consideration be given to the interest of students in the particular sport to be taught in each sport division.

Further study is recommended on physical education activities to determine the value of student interest in developing a physical education program in high schools.

SUMMARY OF FINDINGS

The purpose of the present study was to use criteria set up by authorities and authors in the field, to evaluate:

(1) the high school physical education program of entering freshman girls at Utah State Agricultural College in 1948, in light of selected basic standards of physical education.

a. physical examinations

b. number of years in physical education

c. credits in physical education

d. days per week in physical education

e. intramurals

f. activities participated in

Review of literature pertaining to rhythms pointed out as weakness in that phase of the program in the secondary schools of Utah. A like study of the junior high schools of the state of Washington revealed the same weakness. The lack of facilities for water and winter sports in forty-five percent of the high schools in Utah was brought out in Strain's study. A weakness in the days per week was found in the junior high schools of Washington.

The information of the present study was obtained from freshman girls by means of a questionnaire.

The following is a restatement of the facts found to be true:

(1) Many students are matriculating in the high schools without having had physical examinations. Sixteen percent of the students in this study did not have a physical examination while in high school.

The minimum standard of a yearly physical examination suggested is not being met.

(2) An analysis of material on physical examinations by a medical doctor reveals that 70 students or 23 percent received physical examinations other than by a medical doctor. No attempt was made to determine who besides the doctor gave the examinations. In setting up the standards for this practice, no other person was suggested as qualified to give this examination.

(3) Forty-five percent of the students in this study were not required to take a physical examination before participating in the physical education program.

The suggested standard was that no student should participate in physical education activities without first having had a physical examination.

(4) Seventy percent of students participating in an intramural program were not required to have a physical examination. The suggested standard was that no student should participate in intramural sports without a physical examination.

(5) Analysis of the data on the number of years that physical education was taken while in high school showed that 48 percent of the students were below the suggested standard of enrollment in physical education each year while in high school.

(6) Schools are not uniform in the amount of credit given for physical education participation. The practice ranges from one-fourth unit to a full unit for a year of participation.

(7) Fifty-two percent of the students in the study took physical education five days per week, meeting the standard suggested by the authorities. Forty-three percent met less than five days per week and were below the standards.

(8) Fifty-eight percent of the students did not participate in the intramural sports program. Authorities were agreed that the physical education program should include intramural sports as a part of the program.

(9) In general, the students represented in this study have had physical education activities largely in the team sports division. It seems that the program has been concentrated around a few sports in the team-sport division.

Using 15 participation points as the minimum standard, all six of the study divisions showed a need for increased program offering, as the mean score in all divisions was below the suggested minimum standard.

Team sports had the highest participation mean score of 13.2.

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APPENDIX

School Attended_____ Year Graduated from High School_____
State_____ City_____

Physical Examinations

Check answer

d you have a physical examination while in high school? (yes)(no)How many?___
s the examination given by a medical doctor?.....(yes) (no)
re physical examinations required of students for physical education(yes) (no)
re physical examinations required of students for G.A.A. (intramural
rticipation?.....(yes) (no)

Physical Education

w many years did you take physical education while in high school?_____
w many credits in physical education did you have at graduation?..._____
w many days a week did you take physical education?.....
d you have a girls sports program (intramurals) at your school?...(yes) (no)
ve you ever participated on non school teams? (YWCA, Girl Scout, city, camp,
mmercial) If so, check activities: softball, bowling, tennis, basketball,
imming, etc.....(yes) (no)

How to Score Activities

Participation	Score
lass in high school	5 pts.
d on a non school basis	3 pts.
and can play the sport	1 pt.
ot play the sport	0 pt.

Interest	Score
Would like to have played the sport in high school	5 pts.
Would like to take the sport in college	3 pts.
Would like to learn the sport, but not in college or high school (private instruction)	1 pt.
Not interested in the sport	0 pt.

	Score Part.	Int.
quatics		
. Diving		
. Swimming		
. Life Saving		
. Water Polo		
. _____		
Total Score		
ance-Rhythms		
. Tap Dance		
. Clog Dance		
. Modern (creative) Dance		
. Folk Dance		
. Social Dance		
. Tumbling		
. Pyramids		
. Recreative Games		
Total Score		
ual Sports		
1. Badminton		
2. Fencing		
3. Golf		
4. Tennis		
5. Horseshoes		
6. Ping Pong		
7. Shuffle board		
Total Score		

		Score Part.	Int.
IV.	Indiv. Sports		
	1. Archery		
	2. Skiing		
	3. Track-Field		
	4. Riflery		
	5. Bowling		
	6. Skating		
	7. Snow Shoeing		
	8. Billards		
	9. _____		
	Total Score		
V.	Team Sports		
	1. Basketball		
	2. Softball		
	3. Soccer		
	4. Volleyball		
	5. Speedball		
	6. Ice Hockey		
	7. Field Hockey		
	Total Score		

	Part.	Int.
Total Score of All Groups		

VI. Outing Activ.	Score Part.	Int.
1. Camping		
2. Hiking		
3. Canoeing		
4. Hunting		
5. Fishing		
6. Riding		
7. Fly Casting		
8. Rowing		
9. Cycling		
10. _____		
Total Score		
VII Mental Games		
1. Checkers		
2. Chess		
3. Milde		
4. Rook		
5. Bridge		
6. Pinochle		
7. _____		
Total Score		
VIII Other Sports		
1. _____		
2. _____		
Total Score		